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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/040,834

01/07/2002

Kazuhiro Ebara

P/1071-1521

2656

7590

03/12/2004

Keating & Bennett, LLP  
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EXAMINER

HANLEY, JOHN C

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/040,834	EBARA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John C Hanley	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,4,6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4,6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/20/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

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**DETAILED ACTION**

***Information Disclosure Statement***

1. No translations of the German references were found in applicant's IDS filed on 2/20/04. Thus, these references were not considered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what impedance it is that applicant is referring to in claim 2, in the language "an impedance of the first detecting terminal" and "an impedance of the second detecting terminal". The load impedance is connected to the detecting terminal. So is the input impedance of the amplifier. These impedances combine into one effective or equivalent impedance at the detecting terminal.

***Claim Rejections - 35 USC § 103***

4. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebara et al, for reasons set forth in prior office actions. Ebara et al shows all of the structure recited in applicant's claims, except a specific recitation that the changeable resistors 18a and 18b are variable resistors, and the specific relative values recited. As previously stated by the examiner, Ebara et al states, "By changing the impedances of the resistors, the characteristics of the vibration gyroscope is adjusted." Therefore, Ebara et al clearly teaches that the resistors are changeable. It would have been obvious to one of ordinary skill in the art to make a

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resistor changeable by using a variable resistor. Applicant's remarks have been read and considered, but are unpersuasive. Applicant's argument that the examiner has not established a prima facie case is not well received. Variable resistors are notoriously well known and commercially available for providing a changeable resistance. Further, patentability hinges on an unobvious change, not just any change. Using a variable resistor in a changeable resistor application is not unobvious. Similarly, such resistors are notoriously well known in trimming and adjusting for calibration purposes. Regarding the values of the resistors recited, the examiner still maintains the inherency. If "an impedance" refers to the load (variable) impedances, then "an impedance" would track the values of the load (variable) resistors. If the "an impedance" refers to the impedance of the piezoelectric vibration device, anyone of ordinary skill in the art would recognize that the four impedances of Ebara et al is a balanced bridge arrangement, where null balancing of the bridge is desired at zero output of the sensors. Thus, it would have been obvious to one skilled in the art that to maintain balance at the output, if one of the "an impedances (piezoelectric vibration devices)" goes up, the corresponding load impedance has to be trimmed up to calibrate a null output or balanced condition of the bridge. Applicant argues that Ebara et al requires matched load impedances. One skilled in the art would not accept this argument. One skilled in the art would recognize that this condition is ONLY suitable when the impedances of the piezoelectric elements are matched. However, as this condition is difficult to achieve in the real world, calibration of the balance of the bridge by varying the respective relative values of the resistors in the manner recited in the claims would have been obvious to balance the bridge under less ideal

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conditions normally encountered, as one of ordinary skill in the art would clearly recognize.

5. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebara et al in view of Smith or Johnson. These claims are believed to be obvious to one of ordinary skill in the art in view of Ebara et al, alone, as set forth above. However, applicant has demanded further evidence of the examiners assertions. Smith is a textbook showing of balanced bridge measurements, showing the relative values of impedances to balance a bridge. Similarly, Johnson shows the use of variable resistances in 18 and 19 to balance a bridge, and further teaches to do it for temperature characteristics of the bridge. Thus, it would have been obvious to balance the bridge of Ebara et al by adjusting the relative values of the bridge to null the output of the bridge, as taught in Smith or Johnson.

#### **Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kamenstser et al and Russell et al are further cited to show the use of variable resistors to balance a bridge.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C Hanley whose telephone number is 571-272-2195. The examiner can normally be reached on M-F 9AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCH



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